(n) *Discharge of waters into underground mines.* Surface and ground waters shall not be discharged or diverted into underground mine workings.

(Secs. 101, 102, 201, 501, 503–510, 515–517, 523, and 701, Surface Mining Act of 1977, Pub. L. 95–87), 30 U.S.C. 1201, 1202, 1211, 1251–1260, 1265–1267, 1273, 1291))

[42 FR 62680, Dec. 13, 1977; 43 FR 2721, Jan. 19, 1978; 43 FR 3705, Jan. 27, 1978, as amended at 43 FR 8091, Feb. 27, 1978; 43 FR 21458, May 18, 1978; 44 FR 30631, May 25, 1979; 44 FR 36887, June 22, 1979; 44 FR 77451, Dec. 31, 1979; 45 FR 6913, Jan. 30, 1980]

EFFECTIVE DATE NOTE: A document published at 44 FR 77451, Dec. 31, 1979 temporarily suspended § 715.17(a)(1) insofar as it applies to total suspended solids (TSS) discharges.

§ 715.18 Dams constructed of or impounding waste material.

(a) *General.* No waste material shall be used in or impounded by existing or new dams without the approval of the regulatory authority. The permittee shall design, locate, construct, operate, maintain, modify, and abandon or remove all dams (used either temporarily or permanently) constructed of waste materials, in accordance with the requirements of this section.

(b) *Construction of dams.* (1) Waste shall not be used in the construction of dams unless demonstrated through appropriate engineering analysis, to have no adverse effect on stability.

(2) Plans for dams subject to this section, and also including those dams that do not meet the size or other criteria of § 77.216(a) of this title, shall be approved by the regulatory authority before construction and shall contain the minimum plan requirements established by the Mining Enforcement and Safety Administration pursuant to § 77.216–2 of this title.

(3) Construction requirements are as follows:

(i) Design shall be based on the flood from the probable maximum precipitation event unless the permittee shows that the failure of the impounding structure would not cause loss of life or severely damage property or the environment, in which case depending on site conditions, a design based on a precipitations event of no less than 100-year frequency may be approved by the regulatory authority.

(ii) The design freeboard distance between the lowest point on the embankment crest and the maximum water elevation shall be at least 3 feet to avoid overtopping by wind and wave action.

(iii) Dams shall have minimum safety factors as follows:

Case	Loading condition	Minimum safety factor
I	End of construction	1.3
II	Partial pool with steady seepage saturation.	1.5
III	Steady seepage from spillway or decant crest.	1.5
IV	Earthquake (cases II and III with seismic loading).	1.0

(iv) The dam, foundation, and abutments shall be stable under all conditions of construction and operation of the impoundment. Sufficient foundation investigations and laboratory testing shall be performed to determine the factors of safety of the dam for all loading conditions in paragraph (b)(3)(iii) of this section and for all increments of construction.

(v) Seepage through the dam, foundation, and abutments shall be controlled to prevent excessive uplift pressures, internal erosion, sloughing, removal of material by solution, or erosion of material by loss into cracks, joints, and cavities. This may require the use of impervious blankets, pervious drainage zones or blankets, toe drains, relief wells, or dental concreting of jointed rock surface in contact with embankment materials.

(vi) Allowances shall be made for settlement of the dams and the foundation so that the freeboard will be maintained.

(vii) Impoundments created by dams of waste materials shall be subject to a minimum drawdown criteria that allows the facility to be evacuated by spillways or decants of 90 percent of the volume of water stored during the design precipitation event within 10 days.

(viii) During construction of dams subject to this section, the structures shall be periodically inspected by a

registered professional engineer to ensure construction according to the approved design. On completion of construction, the structure shall be certified by a registered professional engineer experienced in the field of dam construction as having been constructed in accordance with accepted professional practice and the approved design.

(ix) A permanent identification marker, at least 6 feet high that shows the dam number assigned pursuant to §77.216–1 of this title and the name of the person operating or controlling the dam, shall be located on or immediately adjacent to each dam within 30 days of certification of design pursuant to this section.

(4) All dams, including those not meeting the size or other criteria of §77.216 (a) of this title, shall be routinely inspected by a registered professional engineer, or someone under the supervision of a registered professional engineer, in accordance with Mining Enforcement and Safety Administration regulations pursuant to §77.216–3 of this title.

(5) All dams shall be routinely maintained. Vegetative growth shall be cut where necessary to facilitate inspection and repairs. Ditches and spillways shall be cleaned. Any combustible materials present on the surface, other than that used for surface stability such as mulch or dry vegetation, shall be removed and any other appropriate maintenance procedures followed.

(6) All dams subject to this section shall be certified annually as having been constructed and modified in accordance with current prudent engineering practices to minimize the possibility of failures, Any changes in the geometry of the impounding structure shall be highlighted and included in the annual certification report. These certifications shall include a report on existing and required monitoring procedures and instrumentation, the average and maximum depths and elevations of any impounded waters over the past year, existing storage capacity of impounding structures, any fires occurring in the material over the past year and any other aspects of the structures affecting their stability.

(7) Any enlargements, reductions in size, reconstruction or other modification of the dams shall be approved by the regulatory authority before construction begins.

(8) All dams shall be removed and the disturbed areas regraded, revegetated, and stabilized before the release of bond unless the regulatory authority approves retention of such dams as being compatible with an approved postmining land use (§715.13).

§715.19 Use of explosives.

(a) *General.* (1) The permittee shall comply with all applicable local, State, and Federal laws and regulations and the requirements of this section in the storage, handling, preparation, and use of explosives.

(2) Blasting operations that use more than the equivalent of 5 pounds of TNT shall be conducted according to a time schedule approved by the regulatory authority.

(3) All blasting operations shall be conducted by experienced, trained, and competent persons who understand the hazards involved. Persons working with explosive materials shall—

(i) Have demonstrated a knowledge of, and a willingness to comply with, safety and security requirements;

(ii) Be capable of using mature judgment in all situations;

(iii) Be in good physical condition and not addicted to intoxicants, narcotics, or other similar types of drugs;

(iv) Possess current knowledge of the local, State and Federal laws and regulations applicable to his work; and

(v) Have obtained a certificate of completion of training and qualification as required by State law or the regulatory authority.

(b) *Preblasting survey.* (1) On the request to the regulatory authority of a resident or owner of a manmade dwelling or structure that is located within one-half mile of any part of the permit area, the permittee shall conduct a preblasting survey of the dwelling or structure and submit a report of the survey to the regulatory authority.

(2) Personnel approved by the regulatory authority shall conduct the survey to determine the condition of the dwelling or structure and to document any preblasting damage and other